

HEALTHY EATING & PHYSICAL ACTIVITY IN THE EARLY YEARS

Phase 2 Final Evaluation Report

May 2019















Executive Summary

Appetite to Play was developed as a coordinated approach to build the capacity of early years providers to promote and encourage healthy eating and physical activity in early years settings. The components of this provincial initiative are a web resource, online and in-person trainings in physical activity, physical literacy, healthy eating and food literacy, stakeholder support and communication and knowledge translation. The initiative's partners, Child Health BC, YMCA of Greater Vancouver, Childhood Obesity Foundation and Sport for Life Society have come together to provide expertise in the areas of either child health, provincial training, food literacy and healthy eating, and physical activity and physical literacy.

Phase 2 of the initiative was funded by BC Ministry of Health through the BC Alliance for Healthy Living from February 2017 until the end of March 2019. During this period, 2,886 people participated in the training (e-learning, virtual and in-person), there were 23,659 visits to our web resource, and over 60 organizations were engaged in supporting the Appetite to Play initiative.

Our successes and lessons learned moving forward in the next phase of the initiative are as follows:

- 1. A strong alliance between the initiative's partners; we plan to build on these partnerships in the next phase.
- 2. Thorough planning for sustainability from the beginning of phase 2 and now moving the initiative into a cost-recovery model.
- 3. The initial virtual workshops and e-learning modules proved as effective and satisfactory as inperson training sessions, with a potential for broader reach.
- 4. Our train the trainer model was overall successful but could be further improved with better engagement of Regional Trainers and providing more opportunities for them.
- 5. We will continue with stakeholder engagement and building long-term relationship with training participants.
- 6. Learning from web analytics, we will focus strongly on online and social media marketing to drive more traffic to the web resource and training.
- 7. As we saw a wide diversity in training participants, especially groups such as students and parents, we will strive to develop content to cater to those demographics.

In conclusion, we were successful in the implementation of Appetite to Play's phase 2 components, namely launching a web resource, delivering effective training in diverse modalities, engaging with stakeholders, piloting a community of practice, and conducting knowledge translation and outreach. Our successes include but are not limited to strong partnerships, high reach, a train the trainer model, and robust evaluation. Moving into sustainability, we will focus on online training modalities, online marketing, expanding reach, and cost-recovery.



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1. Background, context, and purpose statement

The Healthy Families BC Policy Framework and the BC Physical Activity Strategy identify the early years as a key focus area for action to increase healthy eating and food literacy as well as physical activity and physical literacy for children ages 0-5 [1] [2]. In response to the need for action in the early years, Appetite to Play was developed as a coordinated approach to build the capacity of early years providers to encourage and promote healthy eating and physical activity in early years settings.

1.1 Goals and components

Appetite to Play was implemented to pursue the following goals:

- · developing and maintaining an interactive website,
- developing and delivering in person and online training,
- providing ongoing support and communication to early years providers,
- supporting networking and sharing opportunities, and
- engaging key stakeholders.

Appetite to Play consists of five main components:

- An interactive website (www.appetitetoplay.com) for early years providers. The website hosts a
 variety of physical activity and healthy eating tools, games, tips, ideas, and recipes for early
 years providers to use in their settings, and also share with parents and families. The website
 has a set of interactive tools to help with planning, and has content updated weekly to bring
 early years providers back regularly.
- A set of recommended practices on healthy eating and physical activity in the early years, developed by experts across the province, and linked to BC Child Care Licensing Regulations (CCLR), and Director of Licensing Standard of Practice (DOLSOP) Active Play and Safe Play Space standards
- **Food and physical literacy** training though in-person workshops, e-learning modules, and virtual workshops
- **Support and communication** on a regular basis through social media, e-newsletters, webinars, and mail-outs
- Networking opportunities through the development of a pilot healthy eating and physical activity community of practice

1.1.1 Training

The goal of Appetite to Play's training was to educate early years providers in best practices in physical activity, physical literacy, food literacy, and healthy eating according to provincial standards, and to inform them of Appetite to Play's tools and resources.

Training of early years providers across the province occurred through a "train the trainer" model. In this model, a small number of Master Trainers are trained who in turn train a larger number of Regional Trainers across the province. The Regional Trainers would then run in-person workshops in their communities, while receiving as-required support from the Master Trainers. In-person training of the early years providers has been primarily hosted in partnership with BC's Child Care Resource and



Referral Centres (CCRRs). CCRR programs offer workshops and training to support quality child care the programming in the early years field in every community across BC. In-person training has also been supported through other childcare and early years programs such as Strong Start, YMCA, and BC Recreation and Parks Association (BCRPA).

In addition to in-person workshops, we implemented two online e-learning modules (in physical literacy and healthy eating), and a pilot of ten virtual workshops. The aim of offering diverse training was to further increase the reach and the accessibility of the initiative.

Early Childhood Educators (ECE) are required to complete 40 credits every five years to renew their certificate. Appetite to Play provided professional development credits to ECEs, 3 credits for the inperson workshop, 3 credits for the virtual workshop and 1.5 credits for each of the e-learning modules.

1.2 Partners and key stakeholders

Appetite to Play has been implemented through a coordinated partnership between four organizations: Child Health BC, the YMCA of Greater Vancouver, Childhood Obesity Foundation and Sport for Life Society. Each organization has a specific role in the partnership.

1.2.1 Partners

Child Health BC (CHBC): provides project leadership, central administration and management, coordination of project components, website development and maintenance, central technical support, stakeholder engagement, social media and ongoing communications, and evaluation.

YMCA of Greater Vancouver, in partnership with CHBC, provides central coordination support for the Appetite to Play regional training model, including ongoing support for Regional Trainers. The YMCA provides content expertise as participants on the expert advisory committee. The YMCA also supported the training of the Appetite to Play Master Trainers.

Childhood Obesity Foundation (COF), in partnership with CHBC, provides content expertise around both healthy eating and food literacy. COF, in partnership with Sport for Life, trains Master Trainers and supports the development of the regional and local training workshops, e-learning modules (healthy eating and food literacy), virtual workshops, and resource materials. COF also provides content expertise as a participant on the expert advisory committee. COF has identified and supported an Appetite to Play Master Trainer.

Sport for Life, in partnership with CHBC, provides content expertise around physical activity and physical literacy. Sport for Life, in partnership with COF, trains Master Trainers, supports the development of regional and local training workshops, e-learning modules (physical activity and physical literacy), virtual workshops, and resource materials. Sport for Life also provides content expertise as a participant on the expert advisory committee. Sport for Life has identified and supported an Appetite to Play Master Trainer.

1.2.2 Key stakeholders

Appetite to Play's Advisory Committee is comprised of leaders from early years related organizations, health authorities, and government ministries across BC. The members meet on a quarterly basis to provide guidance and strategic support for the implementation and promotion of Appetite to Play. This includes identifying and establishing sustainable processes that will support the initiative in the future.



Early Years Research Initiative provides support and expertise for the evaluation of the project¹.

BC Recreation and Parks Association (BCRPA) is a not-for-profit organization that focuses on the enrichment of individuals and their communities through the use of recreational facilities and parks. Each year the BCRPA has a large proportion of preschool children across British Columbia visiting their recreation facilities, registering for programs, or attending their licensed childcare programs. Given this context, the YMCA subcontracted the BCRPA to deliver Appetite to Play in-person workshops in municipalities that were proven to be difficult to reach in order to increase the number of workshops delivered across BC.

Early Years Professional Development Web Portal, (EYPD Web Portal)² an initiative of BCcampus and the Provincial Office of the Early Years, is British Columbia's online hub for early years professionals to find and post training events for professional development. The EYPD Web Portal hosted the Appetite to Play pilot online community of practice.

BC Ministry of Health provided funding for the initiative through a grant administered by the **BC Alliance for Healthy Living Society**.

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¹ Appetite to Play evaluation is also a component of "A Good Start Matters" research project led by researchers at University of British Columbia and University of Victoria. This project aims to understand the influence of Director of Licensing Standard of Practice on Active Play (DOLSOP) and capacity-building on policies, environments and practices in BC childcare settings.

² https://earlyyearsbc.ca/



1.3 Timeline of key events

The table below provides a summary of key events during the phase 2 implementation of Appetite to Play.

Table 1. Appetite to Play timeline

Time period	Event
Mar 2015 – Feb 2017	Phase 1
Feb – Jul 2017	Development of training workshops (local, Regional, and Master) materials and initial website content
Jun 2017	Master Trainer training
Aug – Sept 2017	Regional Trainer training #1
Sept 1st 2017	Web resource launched (www.appetitetoplay.com)
Oct 2017	Advisory committee meetings for phase 2 commenced (ongoing, every 3 months)
	Marketing print material and mail-outs launched
Mar 2018	Social media channels launched
Apr 2018	E-learning modules launched
May 2018	Regional Trainer training #2 (including BCRPA Trainers) Regional Trainer refresh
Aug 2018	Promotional video launched
Oct 2018	Sustainability plan approved
Nov 2018	Regional Trainer training #3 (including BCRPA Trainers, Northern BC target)
	Pilot virtual workshops launched (10 sessions until Mar 5 th 2019)
Jan 2019	Pilot Community of Practice launched (four weeks: Jan 14 – Feb 8)
Mar 31st 2019	Phase 2 funding complete

1.4 Logic model

The logic model for Appetite to Play provides a summary look at its different components, outputs, and expected outcomes. This evaluation is mostly focused on outputs and short-term outcomes and mid-term and long-term outcomes of the initiative are out of scope.

Inputs	Activities (initiati	ve's components)	Outputs	Short-term outcomes (6mo-1y)	Mid-term outcomes (1-3y)	Long-term outcomes (3-10y)
Partners - CHBC - YMCA - Sport for Life - COF	Toolkit & web resource	- Website (regularly updated content, planners, etc.) - Hardcopy materials - New content development	# web entries, web analytics (# accounts, logins, clicks, favorites), user emails # hardcopy materials distributed # new content developed - Feedback incorporated	个 ATP website quality and content based on feedback	↑ Knowledge, confidence, capacity, motivation of EY providers in HE and PA planning.	↑ Healthy behavior of BC's children - ↑ Healthy eating - ↑ Physical activity ↑ Health of BC's
Funders - MoH - BCAHL ATP phase I	Training	- Master Trainer and Regional Trainer trainings - In-person workshops - Virtual workshops - E-learning modules - Pre/Post surveys - Follow-up interviews - Incorporate CCLR, DOLSOP & new	# Master/Regional Trainers trained # in-person and online workshops # of providers trained in workshops # e-learning modules - Survey & interview responses - Workshop feedback - Feedback incorporated	↑ Perceived knowledge, confidence, and motivation for HE and PA planning ↑ Workshop and content delivery based on collected feedback	↑ Compliance of EY facilities with DOLSOP and CCLR - Established	children - ↓Diabetes - ↓Obesity
Early Years Research Initiative (UVic/UBC) Advisory committee Technical committees	Stakeholder engagement, support, and communication	Can Food Guide into content - Communication plan - Webinars - Social media & promo video - Response to user feedback - Technical support - Advisory committee meetings - Newsletters - ATP engagement form - Community of Practice platform (CoP) and usage survey	- Communication plan developed # webinars & attendance # social media interactions - Technical support provided # Emails sent to Adv. Comm. # Newsletters # advisory committee meetings # interactions at CoP platform - CoP usage survey responses - Feedback incorporated	↑ ATP website traffic ↑ ATP trainings - Continued engagement of advisory committee - Creation and expansion of a CoP among EY providers with ongoing knowledge exchange	long-term relationship with partners - Further expansion of Community of Practice - The initiative's expansion and	
Early years providers Time	Knowledge translation	Conference presentations & booths Promotion to health authority licensing officers (HA LO) Collaboration with other initiatives Explore regional opportunities	# conference presentations & booths # new interactions # ATP engagement form completed # marketing materials given to HA LOs # presentations to HA LOs # regional opportunities sought - Feedback incorporated	 Knowledge translation at conferences Development of new engagements and collaborations Novel regional opportunities for ATP's expansion 	sustainability beyond the phase 2 trial period	

Context: (1) Healthy Families BC Policy Framework; BC Physical Activity Strategy; BC's Continuum for the Prevention, Management, and Treatment of Health Issues Related to Overweight and Obesity in Children and Youth, Healthy Eating Strategy, BC Guiding Framework for Public Health, BC's geographic and demographic diversity, Social Determinant of Health

Assumptions: Behavior change is a result of the intervention and leads to health improvement; intervention early will lead to long time healthy behavior.

2. Evaluation plan

2.1 Evaluation purpose and type

This is a process/implementation evaluation. The purpose of this evaluation is to:

- Study the implementation process of the Appetite to Play initiative
- Demonstrate the **effectiveness** of the initiative
- Make recommendations for improvement of the initiative and to move into sustainability

The target audiences for this report are its funders and key stakeholders.

2.2 Evaluation approach and methodology

For this evaluation, we took a mixed-methods case study approach. Both qualitative and quantitative data were collected, analyzed, and triangulated to answer the evaluation questions and make recommendations for further improvement of the initiative. The sources of data used for this evaluation are listed in Appendix 1. The evaluation period is between September 2017 and February 2019, inclusive.

3. Evaluation findings

3.1 Appetite to Play website content and utilization

3.1.1 Content development

The content on the web resource was developed to support the implementation of healthy eating and physical activity recommended practices in early years settings. The recommended practices were developed by an expert advisory committee from BC, and are based on evidence in the field, and child care licensing requirements. Content from already existing resources on healthy eating and physical activity in the early years was collected, such as the Healthy Beginnings for Preschoolers 2-5 resource, and published on the website as initial content that early years providers could utilize.

Supported by Sport of Life Society and Childhood Obesity Foundation, Master Trainers curated and developed new web resource content using evidence-based and trusted sources relating to physical activity and healthy eating in the early years. A technical committee comprised of BC experts reviewed the content. The content was finalized and approved by BC Ministry of Health content experts from the Office of the Provincial Dietitian/Physical Activity. Importantly, when new provincial or national guidelines are published on healthy eating and physical activity in the early years, these groups worked together to ensure that the website content is updated. For example this occurred when the Canadian 24-Hour Movement Guidelines for the Early Years and the new Canada's Food Guide were released. Starting in the Fall of 2017, two new posts on healthy eating and physical activity were published per week.

At the end of March 2019, the Appetite to Play website lists 149 Healthy Eating (categorized as recommended practices, tips & ideas, recipes, food activities, and families) and 123 Physical Activity entries (categorized as recommended practices, tips & ideas, activities & games 0-2 years, activities & games 3-5 years, craft activities, and families).

3.1.2 Reach

During the evaluation period, the website had a total number of 23,659 visits (96,804 page views), 38% of which belonged to returning visitors. On average the visitors spent 3 min 56s on the website and performed 4.5 actions (e.g. page clicks, downloads). These values for returning visitors were 5 min 13s and 5.1 respectively, indicating higher engagement of returning visitors. Website traffic gradually increased over time. The website was accessed mostly by desktop computers, although usage of smart phones increased over time. There were 617 items downloaded. There were 1064 accounts created, of which 74.4% were active.

Since May 2018 (data unavailable for time prior), website users conducted 97 self-assessments, 199 activity plans, 95 meal plans, and favorited 633 pages.

We conducted follow-up interviews with 23 workshop participants six weeks after they had completed an in-person workshop. Of those interviewed, 14 (58%) had been on the website, but few (3, 13%) had done further exploration. Time was cited as the number one reason for not using the online resources yet. Stakeholders interviewed also highlighted that multi-level changes occurring in childcare (resulting from changes in provincial funding), influenced the time availability of providers to engage in Appetite to Play:

"People are just so busy. And there is a bit of a...crisis out here with childcare and then with all the new provincial initiatives, it takes up a lot of people's...time." – Initiative stakeholder

Despite the challenges, together our findings point to a well-utilized and engaging website with many opportunities for further growth. For more details on website traffic and its changes over time please see Appendix 2.

3.1.3 Marketing

The initiative's marketing efforts included social media activity and also mail-outs of postcards and other awareness-building materials. Child Health BC distributed about 10,000 general postcards, 5,000 e-module postcards, 735 brochures, 140 booklets, and 5,000 bottles of bubble-makers to diverse stakeholders including but not limited to health authority licensing officers, licensed childcare facilities, Ministry of Childhood Development (e.g. office of the Early Years, and meetings), early childhood community fairs, and public health nurses and dietitians working with early years providers and daycares. These materials were distributed by in-person visits and mail, and also in meetings and during professional gatherings (e.g. conferences or symposiums).



Figure 1. Appetite to Play Marketing materials and booth

Appetite to Play was active on three social media platforms: Twitter (165 followers, 205 Tweets, average 220 impressions per day), Facebook (96 page likes, 102 followers), and Pinterest (average 5,600 monthly views, 264 pins, 11 boards, 18 followers, average 50 visitors per day). The initiative's promotional YouTube video has been viewed more than 1,400 times [4].

According to the website's pop-up survey, the most common referral to the website was through CCRRs, followed by social media, email referrals, and recommendations by supervisors or co-workers.

3.2 Training

3.2.1 Training development

The partnership developed the content of the workshops based on best practices and through a collaborative and iterative process with advice from technical and advisory committees. The training materials were updated approximately every six months based on feedback collected through evaluation surveys and from the Regional Trainers.

3.2.2 Training reach

Master Trainer and Regional Trainer trainings

Through the partnership committee, a total of three Master Trainers were trained and two were retained for the initiative, who in turn trained 88 Regional Trainers through seven Regional Trainer workshops, surpassing the target of training 75 Regional Trainers. We took effort to train Regional Trainers from across the province and maximize the reach of the initiative. These Regional Trainers were employees of the YMCA or members of the BCRPA. The BCRPA was brought on as a collaborator in May 2018 in order to increase the reach of the in-person workshops across the province. Specifically, the BCRPA was subcontracted by the YMCA to help with the delivery of in-person workshops across the province. Of the 88 trained, 56 (64%) were active and delivered at least one in-person workshop.

In-person workshops

Since the launch of the initiative, the Regional Trainers delivered a total of 195 in-person workshops, training a total of 2,328 participants. The workshops took place in 72 municipalities; however, the reach of the training goes beyond those municipalities; in many cases, participants travelled from neighboring regions to attend workshops. For example, a workshop in Duncan included participants from Cobble Hill, Nanaimo, Shawinigan Lake, and Cowichan Bay, while another in Trail included participants from Rossland, Castlegar, and Glenmerry. Overall, the in-person workshops have trained early years providers from at least 97 municipalities. The figures below show the distribution of the Regional Trainers across BC (left) and reach of the in-person workshops (right).

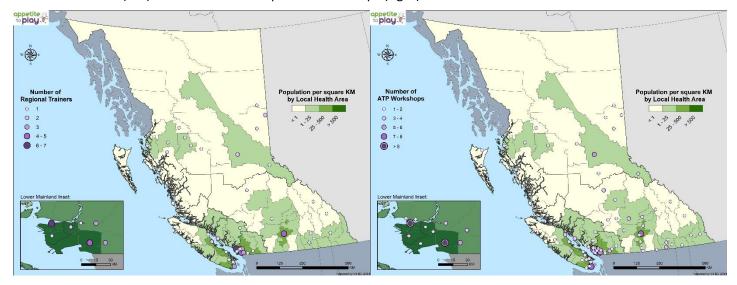


Figure 2. Maps of locations of Regional Trainers (left), and in-person workshops (right).

Virtual workshops

A total of 10 virtual workshops were held, led by the Master Trainers. The virtual workshops trained a total of 164 participants from 42 municipalities. Of the 42 municipalities, four were from out of province (Calgary, AB; Saskatoon, SK; Sudbury, ON; Yellowknife, NWT), and we had attendees from all five regional health authorities.

E-learning modules

A total of 224 Physical Literacy certificates and 170 Healthy Eating certificates were awarded through the web resources' e-learning modules.

In summary, a total of 2,886 of early years providers were trained through the initiative's different training modalities.

3.2.3 Demographic profile of people trained through the initiative

This section describes the overall demographic profile of the training program participants, including those who attended virtual workshops and e-learning modules (herein referred to simply as participants). These data have been acquired through anonymous pre-workshop surveys. For more detailed demographic information on those trained through each of the modalities, please see Appendix 3.

The participants were 96.8% female, and 3.2% male or undisclosed. They ranged in age between 18 and 75, with majority being between 20 and 45. Half of the participants had 10 years or less experience working in early years and 63.1% were ECEs. The most common types of childcare programs the participants worked in were group child care (35.9%) and preschool (21.8%) (Figure 3). Other than early years providers, other participants included students, parents, teachers, support staff (detailed breakdown provided in Appendix 3). 35% of the participants did not have any prior training in physical activity or healthy eating. 27.8% of the participants were providers or group leaders and 40.2% were managers or administrators. In their programs, the participants had an average of 7.9 children of 0-2 years and 20.2 children of 3-5 years.

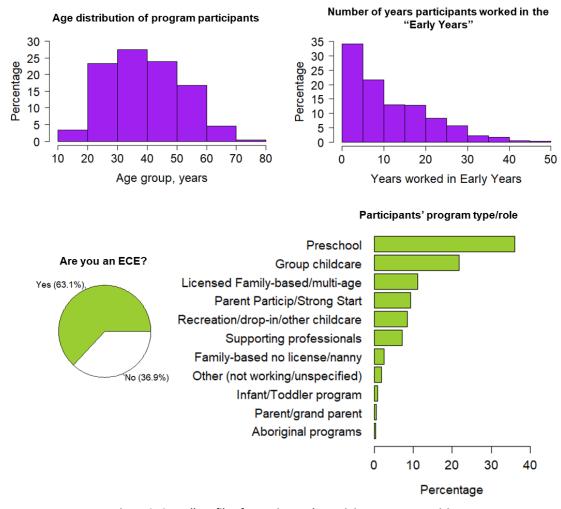


Figure 3. Overall profile of Appetite to Play training program participants

3.2.4 Training satisfaction

We measured training satisfaction via paper-based and online post-surveys (depending on training modality). Table 2 below shows the overall satisfaction of the participants from the training modalities and their perspectives on novelty, delivery, and usefulness.

Table 2. Overall satisfaction with training content and delivery

Type of Training program	In-person workshop	Virtual workshop	E-learning physical literacy	E-learning healthy eating
Workshop content was new to me	27.9 %	16 %	31.4 %	15.1 %
Overall satisfied with content	83.5 %	89.3 %	91.4 %	86.3 %
Overall satisfied with delivery	85.8 %	94.7 %	91.4 %	90.4 %
Training will be useful	80.8 %	84 %	85.7 %	69.9 %

Numbers indicate percentage of people who selected "agree" or "strongly agree" on a 5-item Likert scale (Strongly disagree...neutral...strongly agree).

We believe that the relatively low rating on content novelty could be due to the delivery of other provincial programs with similar focuses in the past, such as Hop and Healthy Beginnings.

Qualitative data from follow-up interviews backs up the low response of "content was new". Several participants highlighted that the workshop material was interesting, but it was a "refresher" for them.

"It just gave us something to ... go by, to... validate what we were trying to accomplish."

Regional Trainers supported this, finding that the workshop has a greater benefit to newer ECEs; for those who have been in the field for a long time, Appetite to Play was "more of a refresher". Our own analyses from post-training surveys support this; in fact, providers with lower years of experience were more likely to find the content new than seasoned ones.

Further, stakeholders highlighted the perception that Appetite to Play was "repeat" materials.

"They had had Food Flair, and then they had had Hop and then they had had Healthy Beginnings and so I think there was a little bit of like 'another program'? We just got trained up on the previous ones and have delivered those."

Although most of the participants "somewhat agreed" that the workshop content was new to them, the extreme majority were very satisfied or satisfied with workshop content, delivery, and perceived utility. It is important to highlight that these patterns were similar across all types of training. Participants' satisfaction with content and delivery is further highlighted in Table 3 below that summarizes responses to questions on what the participants liked most and least about the training. Sample quotes are provided in Table 4.

Table 3. A thematic look at what the participants liked most and least about their trainings, listed in no particular order

	In-person workshop	Virtual workshop	E-learning modules
Likec most	■ Games ideas and treehies	 Convenience of attending from home Resources, ideas, links Games and activities, interactive features 	 Learning new activity ideas, resources Videos and interactive components Ease of use, online

	In-person workshop	Virtual workshop	E-learning modules
	 Learning about importance of healthy and physical literacy at an early age Learning about the important role of the environment Learning about how to make things interesting for kids 	 Presenter energy Useful and understandable content 	 Clarity and flow of the content Informative content
Liked least	 Paperwork and Lengthy surveys Workshop timing (end of day) and duration, lots of sitting Low presenter engagement Technical issues 	Limited*: • Technical issues • Workshop timing (End of day) and duration, no breaks • Limited interaction with other participants • Some content not new	Limited*: • Technical issues • Slow and monotonous presenter voice • Some content not new

Table 4. Sample quotes of what the participants liked most and least about the training programs

	ruble 4. Sumple quotes of what the participants incu most and least about the training programs
	Sample quotes from post-training surveys
Liked Most	"I loved the activities that were presented. They required very little money and very little prep time!" In-person workshop participant
	"Presenters very enthusiastic and informed. Very positive environment fostered by the facilitators. Very well done. Thank you!" In-person workshop participant
	"I appreciated the links to further learning. And I found the workshop to be validating. I'm feeling more confident that what we are doing in our programming supports children and families in learning and developing healthy practices." Virtual workshop participant
	"I can enjoy the comfort at my own home during the workshop, save lots of travel time." Virtual workshop participant
	"I liked the combination of visuals with the text and audio, I think it really helped to highlight the content." E-learning module participant
Liked Least	"A lot of time spent on basic implementation which as ECEs we should know." In-person workshop participant
	"A lot of reading and sitting for a long period of time only listening." In-person workshop participant
	"I have to do too many tasks: watch the screen, write on chat box, use phone but it is fun." Virtual workshop participant
	"Would have liked more in depth videos and it seemed to move very slowly through ideas." E-learning module participant

3.2.4 Training effectiveness

We used pre/post workshop surveys to measure the effectiveness of the training program in improving the perceived knowledge and confidence of the participants in 47 aspects of physical activity and physical literacy as well as healthy eating and food literacy. Average perceived knowledge and confidence improved in all aspects after the workshop for all training modalities. These differences were statistically significant for almost all aspects except for a few of the aspects in the e-learning modules, for which there was a smaller sample size. Selections of the aspects are listed in Table 5 below. Full tables and notes on methodology can be found in Appendix 4.

Table 5. Examples of improvements in knowledge and confidence of workshop participants after training

Training program			In-person	workshop	Virtual wo	rkshop	E-learning modules		
Туре	Category	Aspect	Pre- survey average (SD)*	Post- survey average (SD)	Pre- survey average (SD)	Post- survey average (SD)	Pre- survey average (SD)	Post- survey average (SD)	
	Physical	Locomotor skills [#]	3.1 (1)	4 (0.7)	3.1 (1)	3.8 (0.8)	3.5 (0.9)	4.2 (0.7)	
1	activity	Physical literacy	3.1 (1)	4.1 (0.7)	3.1 (0.9)	3.9 (0.7)	3.5 (0.9)	4.2 (0.7)	
Knowledge	Hoolthy.	Supporting children to become good eaters	3.8 (0.9)	4.3 (0.7)	3.8 (0.9)	4.2 (0.7)	3.9 (0.9)	4.3 (0.7)	
	Healthy eating	Developing organizational policies for healthy eating	3.1 (1.1)	3.9 (0.9)	3.4 (1)	4 (0.7)	3.6 (1.1)	4.1 (0.9)	
	Physical activity	Frequent short burst, intermittent activity	3.3 (0.9)	4 (0.8)	3.4 (1)	4 (0.7)	3.8 (0.8)	4.3 (0.7)	
) Jce		Children's motivation to move	3.6 (0.9)	4.2 (0.7)	3.7 (0.9)	4 (0.7)	3.8 (0.9)	4.3 (0.7)	
Confidence	Healthy eating	Offer a variety of foods at meals and snacks from Canada's Food Guide	3.9 (0.9)	4.4 (0.7)	3.9 (0.9)	4.1 (0.7)	3.5 (1.1)	4.1 (0.9)	
		Model and promote healthy eating habits	4 (0.9)	4.4 (0.7)	4 (0.9)	4.3 (0.6)	4 (0.9)	4.4 (0.7)	

[#] All differences represented above are statistically significant (Wilcoxon signed rank test, p < 0.05). 1-5 scale adapted from a Likert scale used in the survey (no knowledge...a lot of knowledge). Complete data and methodology in Appendix 4.

^{*} SD: Standard deviation

3.2.5 Intentions

We also measured participants' intentions and enjoyment in promoting physical activity and physical literacy and healthy eating after the trainings. As can be seen in Table 6, the results indicate strong intentions and enjoyment in promoting physical activity and physical literacy and healthy eating practices across modalities. This further supports the effectiveness of the training programs.

Table 6. Intentions of workshop participants in promoting physical activity and physical activity and healthy eating practices

Category	Training program	In-person workshop average (SD)*	Virtual workshop average (SD)	E-learning module average (SD)
Physical activity and	Intention to promote [#]	4.3 (0.6)	4.3 (0.5)	4.1 (0.6)
physical literacy	Enjoyment in promoting	4.4 (0.7)	4.4 (0.5)	4.3 (0.6)
Healthy eating	Intention to promote [#]	4.1 (0.6)	4.1 (0.6)	2.8 (0.5)

[&]quot;Intention to promote is a construct built from three questions that separately measure intention, determination, and motivation. We measured the reliability of the constructs (Cronbach's alpha ≥ 0.8). Scales are from 1 to 5 (5 highest) adjusted from a Likert scale (strongly disagree...neutral...strongly agree).

* SDL Standard deviation

3.2.6 Access to resources

Before and after trainings, we asked participants if they felt that they have access to the resources they need for implementing physical activity and healthy eating practices. Following the training, the impression of having access to needed resources and tools significantly increased, in all training modalities (Table 7).

Table 7. Perception of adequate access to tools and resources to implement physical activity and healthy eating practices

Training program		In-person	workshop	Virtual wo	rkshop	E-learning modules		
Survey question	Area	survey survey s average average a		Pre- survey average (SD)	Post- survey average (SD)	Pre- survey average (SD)	Post- survey average (SD)	
Do you have the resources and tools	Physical activity and physical literacy	2.3 (0.9)	2.9 (0.9)	2.4 (0.9)	3.1 (0.7)	2.4 (0.9)	3.3 (0.8)	
you need to promote:	Healthy eating	2.4 (1)	2.9 (0.9)	2.5 (0.9)	3.2 (0.8)	2.5 (0.9)	3.2 (0.8)	

All differences represented above are statistically significant (Wilcoxon signed rank test, p-value < 0.05). 1-5 scale adapted from a Likert scale used in the survey (I don't have the tools I need...I have some...I have all that I need).

* SD: Standard deviation

As follow-up, we asked the participants what makes it easy or hard for them to implement physical activity and healthy eating practices. Summary results of these questions are provided in Table 8.

^{*} SD: Standard deviation

ruble 8. Eurly years providers Jucilitators and challenges	<i>III III</i>	ipieiii	enung	pily	sicui ut	livity u	na neamn	, eutilig pro	uctices	
Implementing physical activity and physical										

re! facilitatore and challenges in implementing physical activity and healthy eating practices

	Implementing physical activity and physical literacy practices	Implementing healthy eating practices
Facilitators	 Using available resources, such as the Appetite to Play materials, to provide activities and games Planning, providing equipment, and using indoor spaces such as gyms Involving the children 	 Modelling and encouraging healthy eating Providing activities and opportunities to try out foods Using resources such as the Appetite to Play materials and the Canada Food Guide
Challenges	 Weather Insufficient or inadequate space and resources Issues related to the centre, policies, staff support and willingness 	 Having the parents on board for ensuring healthy eating practices, particularly as many participants identified that they did not supply food to children The children, particularly as due to picky eaters and concerns around allergies Small budgets, lack of resources

3.3 Stakeholder engagement, support, and communication

Over the course of implementation, we engaged with over 60 organizations. The purpose of these engagements were to: set up in-person and virtual workshops, recruit Regional Trainers, engage licensing officers, promote the initiative, provide information about the initiative, develop partnerships, collect feedback, develop new e-learning modules, set up social media channels, set up the community of practice, explore inclusion of Appetite to Play into strategies and curricula, and knowledge translation (setting up booths and webinars). These organizations included but were not limited to health authorities and health organizations within and beyond BC, ministries, colleges, non-profit organizations, First Nations organizations, immigrant-services organizations, and CCRRs.

A few key components of the initiative's stakeholder engagement are highlighted below.

3.3.1 Advisory committee

Since the launch of its phase 2, we held six advisory committee meetings during which the members offered guidance and advice on the overall initiative and identified areas for improvement. Importantly, the advisory committee acted as a sounding board to strongly broaden the reach of the initiative through their strategic relationships within the ministries, health authorities, and other organizations with ties to the early years.

3.3.2 Community of Practice

As part of the initiative's aim to provide a platform for early years provides to network, we piloted an online community of practice forum from for four weeks in January 2019 through the Early Years Professional Development Web Portal (EYPD). Forty-three people representing 27 municipalities within and beyond BC signed up and there were 12 active contributors, which led to 339 interactions through the pilot. Two Regional Trainers facilitated the community of practice, and Master Trainers monitored the pilot program and provided input as needed. ECEs who participated in the community of practice received 2 hours of professional development credits.

Thirteen members responded to a summative evaluation survey. The respondents overall expressed a very positive experience, with the majority agreeing that they benefited personally and professionally from the community of practice, and that they were able to share ideas and communicate issues with healthy eating and physical activities for children. Respondents also indicated that they plan to implement more physical activity ideas and better communicate and empathize with parents.

"It was great to hear about different centres, non-for-profit and profit and learn about our differences and similarities. I appreciate that our moderators provided resources, and they kept discussions alive. Thank you very much for the great experience." – Community of practice member

The Regional Trainers expressed a positive experience despite indicating that they were not experts in the field.

"I didn't have to know everything, like everything about everything because I'm not a nutritionist, I'm not a physical activity expert. I felt like my responsibility was to make everyone who participate feel heard." – Community of practice moderator

Looking forward, the members asked for more content such as online resources and webinars to be available, including culturally diverse menu options. The moderators indicated that the details of co-moderating roles (e.g. who will post and who will respond, introducing new topics, sustaining momentum) should be better outlined and more multimedia tools can be incorporated into the forums.

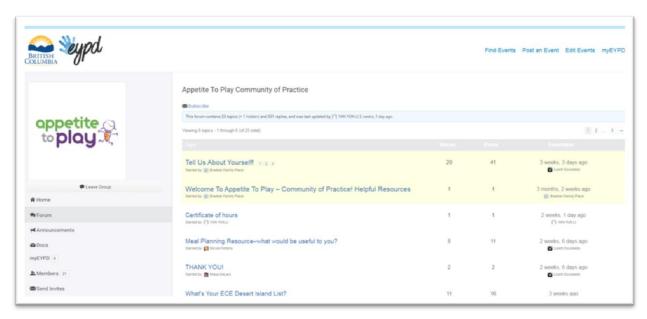


Figure 4. The overall look of the Community of Practice online forum

3.3.3 Newsletters

Monthly e-newsletters were sent to the Regional Trainers to update them on the progress of the initiative, professional development opportunities, call-to-actions for promoting the initiative and important administrative matters. Overall, 15 monthly e-newsletters were sent to all Regional Trainers, starting in January of 2018, with an average open-rate of 64%.

A quarterly general e-newsletter was sent to anyone who signed up for the Appetite to Play mailing list. This list included past participants of workshops and people who had signed up for an account on the website. The content usually included posts from the web resource, new training opportunities, and information on related initiatives, such as the Canadian 24-Hour Movement Guidelines for the early years. Overall, a total of five e-newsletters were delivered to our 908 subscribers, with an average open rate of 56.2%.

3.4 Knowledge translation and outreach

We have presented our learnings from implementation and scale-up of Appetite to Play for diverse audiences. The activities and some examples have been listed below. Full list of the knowledge translation and outreach activities can be found in Appendix 5.

Table 9. Counts and examples of Appetite to Play's knowledge translation activities

Type of knowledge translation activity	Count	Examples
Conference booth	11	 ECE BC Conference (Richmond, BC) Community Resource Fair for Families in Mount Pleasant Neighbourhood (Vancouver, BC) 7th Conference on Recent Advances in the Prevention and Treatment of Childhood and Adolescent Obesity (Vancouver, BC)
Conference presentation	10	 Early Years Conference (UBC), Public Health Association of BC Conference (Vancouver, BC) International Physical Literacy Conference (Winnipeg, MB) International Union for Health Promotion and Education (Rotorua, New Zealand)
Online presentation	5	Interior Health - Maternal Infant Public Health
Regular presentation	3	Vancouver Coastal Health and Fraser Health Licensing Officers
Webinar	6	Food Skills for Families (Diabetes Canada)BC Early Years Nutrition Call
Peer-reviewed publications	3	 Wejis et al. Canadian Journal of Public Health, Feb 2019 National Collaborating Centre for Methods and Tools (NCCMT), The evidence-informed decision-making casebook: Sharing success stories for public health in Canada

There are three main stakeholders who have contributed immensely to the promotion and outreach of Appetite to Play: Child Care Resource and Referral (CCRR), Health Authority Licensing Officers, and public health dietitians who focus on the early years.

CCRRs provide space and recruitment of participants around the province for the delivery of Appetite to Play in-person workshops. Licensing Officers from all health authorities received the Appetite to Play booklets, brochures, and postcards to give to childcare licensees upon visitation. Public health dietitians from the different health authorities have invited Appetite to Play to participate in community events to promote healthy eating and food literacy in the early years and have hosted workshops as well.

4. Discussion: lessons learned moving forward

4.1 Strength of the partnerships

The initiative benefited from a strong alliance between its partners who worked together throughout the entire implementation. Clarity of roles, shared decision making, regular communication and feedback were among the contributing factors to having a strong partnership. **The partnerships will continue their collaboration as the initiative moves into sustainability.**

4.2 Sustainability planning

Planning for sustainability of the initiative began at the beginning of phase 2. For Appetite to Play to continue being a gold-standard training resource and commit to quality, sustainability and improvement, **the initiative is moving into a cost-recovery model**. This includes, but is not limited to, a stronger emphasis on more accessible and cost-effective online training formats, and a higher but reasonable price (similar to that of other professional development trainings offered to early years providers) for access to trainings. This format will provide funds to support the continuous development of new content, implementation of strategies to increase awareness, and establishing a process to collect and monitor participant feedback to support quality improvement activities.

4.3 Training modalities

Offering training in multiple modalities indeed improved the reach and accessibility of the initiative. Importantly, the online training modalities, (e-learning modules and virtual workshops) were overall as effective in improving the perceived knowledge, confidence, and intentions of the participants as the in-person workshops. Furthermore, overall satisfaction with content, delivery, and utility of the content was highly similar across modalities and participant comments pointed to convenience of attending online training.

Given these and the significantly lower cost of planning and delivering online training compared to in-person training, we plan to put a stronger emphasis on these modalities as the initiative moves into sustainability.

4.4 Train-the-trainer model

This model allowed for training and consistent support of a large number of Regional Trainers and in turn having close to 200 in-person workshops across the province. These Regional Trainers will continue to hold in-person workshops for the next phase of the initiative.

This model also had its challenges, especially in engagement. Program coordinators had to work hard to try to support all trained Regional Trainers to successfully deliver in-person workshops. Regardless, about 36% of Regional Trainers did not deliver any workshops. Low financial incentive (small number of workshops), limited opportunities to deliver workshops preferred locations were among the factors that could have contributed to this attrition. Regional Trainers trained through the collaboration with BCRPA had a contract to do at least one workshop within a year, which increased engagement. Providing financial incentive for Regional Trainers can decrease turnover (e.g. guaranteeing a certain number of hours). Other financial incentives include training them in more Appetite to Play training opportunities (e.g. virtual workshops) or partnering with other train-the-trainer models so that Regional Trainers can have a larger skillset to deliver different types of workshops.

4.5 Continued stakeholder engagement

Our findings suggest that continued engagement with stakeholders is key for the long-term success of Appetite to Play. These engagements would take different forms depending on the type of stakeholder. Workshop participants suggested rather than a "newsletter" style email, the emails could be an activity or a recipe, something they could easily use. Inperson communication with Regional Trainers was also suggested, for example one participant mentioned in the follow-up interview:

"It would be lovely to see the person that facilitated (Regional Trainer)... she could drop by any time and run a game".

During phase 2, Appetite to Play paid Regional Trainers to do a few hours of outreach in their local area by talking about the initiative at relevant community tables and events. Regional Trainers and Master Trainers both pointed to the need for continued engagement with early years communities to maintain the relationship, promote retention, allow for two-way flow of information and updates, and to collect and incorporate feedback.

Continuous engagement and communication with external organizations and collaborators was also key in expanding the initiative's reach and the successful implementation of its components. Moving forward, **stakeholder engagement will be a standing agenda item on partnership meetings.**

4.6 Marketing and reach

According to the website's pop-up survey data, the main drivers of people to the website were organic peer-to-peer spread of information and local CCRRs. These were despite our strong efforts in paper-based marketing of the website. Our presence on social media was limited; it nevertheless drove significant traffic to the website. In the next phase, we plan to focus more on strategic online and social media marketing methods to drive traffic to the website and increase uptake of trainings.

Word of mouth, peer-to-peer communication, health care professionals, and local professional networks (e.g. CCRRs) were deemed as other effective means for increasing awareness of the initiative. Follow-up interviews, highlighted this as well, especially in smaller communities:

"In somewhere like a small community like Haida Gwaii we should absolutely be reaching out to these public health professionals, in other areas because they do have this interaction, because what we're focused on is health parameters of these children...that's one hundred percent their population target."- Appetite to Play Master Trainer

We plan to engage and incentivize Regional Trainers to be advocates and promoters of the initiative in local hubs and networks, such as local health care facilities, libraries, and community centres. This will serve the double purpose of further engaging the Regional Trainers in the initiative and also furthering its reach.

Finally, as we saw that a significant number of ECE students were present at the trainings and that participants with less experience were more likely to find the trainings as new, we will work to further engage ECE students and new graduates.

4.7 Evaluation

Having a strong emphasis on evaluation, we collected diverse forms of data throughout the initiative's implementation. This data assisted us in continuously improving the initiative, producing a robust evaluation report with confidence in the initiative's implementation and effectiveness, and developing concrete steps and recommendations for moving into sustainability. The challenges with evaluation are mainly with regards to the logistics of collection and storage of the data while respecting ethics and privacy rules. Having relatively long paper-based pre/post surveys at in-person workshops provided us with a wealth of knowledge, but the procedure for this data collection was resource-intensive. Having established the evidence for effectiveness of the training, we will implement a shorter and more agile evaluation method for continuous quality improvement. We will also conduct follow-up surveys with training participants to learn more about how Appetite to Play can be better adapted to fit their workplace needs.

4.8 Advisory and technical committees

The advisory and technical committees brought in highly valued expertise and oversight to the initiative and improved its geographic and strategic reach. The committee members have expressed interest in remaining engaged with the initiative. We will also engage ECE and parent advisory groups as the users of the initiative to improve its impact and utility.

4.9 Content

We found through the evaluation that the scope of the workshops was broader than early years providers and included other demographics such as students, supporting professionals, and parents. Engagement of other demographics, especially parents was deemed as important in the follow-up interviews as well:

"One of the – the big pieces I'm hearing from everyone is the parent engagement. So the ECEs and the early years providers get it, cause they've done education around it, whereas well the parents are coming in not knowing that same kind of level of information."- Appetite to Play Master Trainer

This can be further achieved by engaging parents in Appetite to Play training and also focusing on communication with parents in training of the early years providers. As the initiative moves to broaden its scope and cater to these demographics as well, we will strive for the website content to match that. We will get feedback through follow-up surveys and advisory committees on we will survey users on the content they would like see on the website, including e-learning modules.

5. Conclusion

In conclusion, the implementation of the phase 2 components of the Appetite to Play initiative was successful. We launched the web resource toolkit, delivered effective training through different modalities to early years providers to all areas across the province, engaged stakeholders from many early years organizations over the course of the initiative, and implemented innovative knowledge translation and outreach activities. The success of the initiative can be attributed to strong partnerships, high reach, a train the trainer model, and robust evaluation. Moving into sustainability, we aim to put a stronger focus on online training modalities, and online marketing to further improve the initiative's reach, expand its target demographics, and implement a cost-recovery model.

6. Acknowledgements

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7. List of abbreviations

ATP	Appetite to Play	ECE	Early Childhood Educator
BCAHL	BC Alliance for Healthy Living	EY	Early Years
BCRPA	BC Recreation and Parks Association	EYPD	Early Years Professional Development Web Portal
CCLR	Childcare Licensing Regulations	HA LO	Health Authority Licensing Officer
CCRR	Child Care Resource & Referral programs	HE	Healthy Eating
СНВС	Child Health BC	МоН	Ministry of Health
COF	Childhood Obesity Foundation	PA	Physical Activity
DOLSOP	Director of Licensing Standard of Practice	SD	Standard deviation

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9. Appendices

Appendix 1. Sources of data

Source	Tool/Instrument	Type of data	Product/learning outcome
ATP website	Web analytics	Quantitative	Website content, actions, reach and traffic
Social media accounts	Web analytics	Quantitative	Social media engagement
 ATP staff Program manager and coordinators Master Trainers Regional Trainers 	 Administrative records Issues and resolutions spreadsheet Engagement form Interviews 	Quantitative and qualitative	 Marketing Workshops details Workshop satisfaction Participants information Community of practice Lessons learned and recommendations Knowledge translation and outreach
Partnerships	Meetings, emails	Qualitative	Training developmentLessons learned and recommendations
Workshop / E-learning module participants	Registration formsPre/post workshop surveys	Quantitative and qualitative	Workshop satisfactionTraining effectivenessProfile of people trained
Workshop participants	Follow-up interviews	Qualitative	Workshop satisfactionWeb tool utilityLessons learned and Recommendations
Community of Practice participants & moderators	Survey	Quantitative and qualitative	Community of practice satisfactionLessons learned and Recommendations
Advisory committee	Meetings, interviews	Qualitative	Recommendations

Appendix 2. Detailed web analytics

Date range	Sept 1 st 2017 Feb 28 th , 2018	Mar 1 st 2018 Aug 31 st , 2018	Sept 1 st 2018 Feb 28 th , 2019	Overall
Total number of visits	6,345 (44% in Canada)	8,063 (52% in Canada)	9,251 (37.7% in Canada)	23,659 (41.8% in Canada)
Number (%) of returning visitors	2,789 (43.9%)	3,187 (39.5%)	3,138 (33.4%)	9114 (38.5%)
Average number of actions (things users did on the website, e.g. clicks, searches, downloads)	5.4	4.3	3.9	4.5
Average number of actions for returning visitors	5.8	4.8	4.8	5.1
Average time on site	5min 26s	3min 40s	3min 9s	3min 56s
Average time spent on site spent by returning visitors	7min 10s	4min 39s	4min 4s	5min 13s
Bounce rate (percent leaving the site after one page)	43%	52%	55%	51%
Total page views	32,986	32,028	31,790	96,804
Downloads	157	206	254	617
Total searches on website	647	391	476	1514
Acquisition (from the users access the website)	65% direct entries 21% search engines 14% websites	59% direct entries 31% search engines 10% websites	52% Direct entries 34% search engines 13% websites	58% direct entries 30% search engines 9% websites
Top referring websites	Twitter SportforLife	Facebook Twitter	cotronline.ca ChildHealthBC Google for Android	Facebook Twitter SportforLife
Device types	75% desktop 21% smartphone 4% other (tablet etc.)	66% desktop 27% smartphone 7% other	62.3% desktop 30.7% smartphone 7% other	66.8% desktop 26.9% smartphone 6.3% other
Top pages (by page views)	 Homepage Physical-activity Healthy-eating User (login, register) Planning tools (self-assessment) 	 Homepage Healthy-eating Physical-activity User (login, register) Training 	 Homepage Healthy-eating Physical-activity User (login, register) Training 	 Homepage Healthy-eating Physical-activity User (login, register) Training

Appendix 3. Participant profiles

Profile Feature	In-person workshop	Virtual workshop	E-learning module physical literacy	E-learning module healthy eating
Number (%) of survey respondents	1212 (65%)*	154 (93%)	123 (55%)	113 (65%)
Percent female	95.5%	96.7%	96.4%	95.9%
Age distribution	35 30 25 25 20 0 10 20 30 40 50 60 70 80 Age group, years	35 30 25 25 20 10 20 30 40 50 60 70 80 Age group, years	35 30 96 25 10 10 10 20 30 40 50 60 70 80 Age group, years	35 30 90 25 25 20 0 10 10 20 30 40 50 60 70 80 Age group, years
% ECE	62.5%	76.7%	71.4%	64%
Years worked in the Early Years	40 95 30 20 0 10 0 10 10 20 30 40 50 Years worked in the Early Years	40 90 30 20 0 10 0 10 0 10 20 30 40 50 Years worked in the Early Years	40 95 30 10 0 10 10 10 20 30 40 50 Years worked in Early Years	40 90, 30 10 0 10 20 30 40 50 Years worked in Early Years
% without any prior training in physical activity	40%	50.6%	49.6%	N/A
% without any prior training in healthy eating	33.6%	43.5%	N/A	44.3%
% with provider or leader roles	17.0%	65.7%	56.9%	60.2%

Profile Feature	In-person workshop		Virtual workshop		E-learning module physical I	iteracy	E-learning module healthy o	eating		
% manager or admin roles	37.2%		48.3%		49.6%		50.4%	50.4%		
Average number of 0-2 year old children in group	6.6		7.1		8.7		5.2			
Average number of 3-5 year old children in group	10.4		21.9		35.4		21.9			
Type of child care programs	Program Type/Role Group childcare Preschool Parent Particip/Strong Start Licensed Family- based/multi-age Recreation/drop- in/other childcare Supporting professionals Family-based no license/nanny Other (not working/unspecified) Infant/Toddler program Parent/grand parent	% 36.5 22.4 9.9 9.4 8.5 6.9 2.4 1.7 1.2	Program Type/Role Group childcare Preschool Licensed Family- based/multi-age Recreation/drop- in/other childcare Parent Particip/Strong Start Supporting professionals Family-based no license/nanny Other (not working/unspecified) Infant/Toddler program Aboriginal programs	 % 41.7 22.3 18.9 6.9 4.6 2.9 2.3 0.6 0 0 	Program Type/Role Group childcare Preschool Licensed Family- based/multi-age Supporting professionals Parent Particip/Strong Start Recreation/drop-in/other childcare Family-based no license/nanny Other (not working/unspecified) Infant/Toddler program Aboriginal programs Parent/grand parent	% 25.6 16.2 16.2 13.7 11.1 11.1 2.6 0 0 0	Program Type/Role Group childcare Licensed Family- based/multi-age Preschool Supporting professionals Recreation/drop-in/other childcare Parent Particip/Strong Start Other (not working/unspecified) Family-based no license/nanny Infant/Toddler program Aboriginal programs Parent/grand parent	% 31.5 18 17.1 10.8 7.2 6.3 5.4 3.6 0 0		
	Aboriginal programs	0.7	Parent/grand parent	0						

^{*} Since collection and digitization of the in-person workshops' paper-based surveys is labor-intensive and time-consuming, only in-person workshop survey data for up to the end of October 2018 was included in this report. The response rate mentioned here reflects the 1866 participants who were surveyed until that date, not the total participants trained through the whole initiative.

Appendix 4. Pre/post measures of knowledge and confidence

All Appetite to Play training modalities were effective in improving self-assessed knowledge and confidence of the participants.

Methodology: We performed Wilcoxon signed rank tests to compare the average self-assessed knowledge and confidence of workshop participants before and after the trainings. Knowledge and confidence were measured through Likert scales, transformed into numeric values on the scale of 1-5 (1: no knowledge, confidence, 5: a lot of knowledge, confidence). The tests are paired for the in-person and virtual workshops and unpaired for the e-learning modules due to smaller sample size.

Averages, standard deviations of before and after workshop scores and measures of statistical significance (*: p-value < 0.05, **: p-value < 0.01, ***: p-value < 0.001, NS: not significant, p-value \geq 0.05) are presented in the table below.

				In-pe	erson worksho	р	Virtual workshop			E-learning module		
#	Туре	Category	Area	Pre-survey average (SD)	Post-survey average (SD)	p-value	Pre-survey average (SD)	Post-survey average (SD)	p-value	Pre-survey average (SD)	Post-survey average (SD)	p-value
1	Knowledge	Physical activity	Locomotor skills	3.1 (1)	4 (0.7)	***	3.1 (1)	3.8 (0.8)	***	3.5 (0.9)	4.2 (0.7)	***
2	Knowledge	Physical activity	Manipulative skills	3.3 (0.9)	4 (0.7)	***	3.3 (1)	3.8 (0.8)	***	3.6 (0.9)	4.1 (0.7)	***
3	Knowledge	Physical activity	Balance and stability activities	3.4 (0.9)	4.1 (0.7)	***	3.3 (0.8)	4 (0.7)	***	3.7 (0.8)	4.2 (0.7)	***
4	Knowledge	Physical activity	Moderate to vigorous physical activity	3.4 (0.9)	4.1 (0.7)	***	3.4 (0.9)	3.9 (0.7)	***	3.8 (0.8)	4.2 (0.7)	**
5	Knowledge	Physical activity	Short burst, intermittent activity	3.1 (1)	3.9 (0.8)	***	3.2 (0.9)	3.7 (0.8)	***	N/A	N/A	
6	Knowledge	Physical activity	Facilitated physical activities	3.4 (0.9)	4.1 (0.7)	***	3.4 (0.8)	3.9 (0.7)	***	3.7 (0.8)	4.2 (0.7)	**
7	Knowledge	Physical activity	Physical literacy	3.1 (1)	4.1 (0.7)	***	3.1 (0.9)	3.9 (0.7)	***	3.5 (0.9)	4.2 (0.7)	***
8	Knowledge	Physical activity	Providing opportunities for exploration and free play	3.9 (0.9)	4.3 (0.7)	***	3.9 (0.9)	4.1 (0.7)	*	3.9 (0.8)	4.2 (0.7)	*
9	Knowledge	Physical activity	Adapting physical activities for different ages, abilities, and cultures	3.6 (1)	4 (0.8)	***	3.5 (0.9)	3.9 (0.7)	***	3.7 (0.9)	4.1 (0.7)	*
10	Knowledge	Physical activity	Creating an environment that encourages physical	3.8 (0.9)	4.2 (0.7)	***	3.6 (0.9)	4 (0.7)	***	3.8 (0.9)	4.1 (0.7)	NS

				In-pe	erson worksho	op	Vir	tual workshop)	E-learning module		
#	Туре	Category	Area	Pre-survey average (SD)	Post-survey average (SD)	p-value	Pre-survey average (SD)	Post-survey average (SD)	p-value	Pre-survey average (SD)	Post-survey average (SD)	p-value
			activity									
11	Knowledge	Physical activity	Limiting sedentary behaviors (e.g. screen time and prolonged sitting	3.7 (1)	4.2 (0.8)	***	3.8 (1)	4.1 (0.7)	**	3.9 (0.8)	4.2 (0.7)	*
12	Knowledge	Physical activity	Communicating about physical activity/physical literacy with families	3.1 (1)	3.9 (0.8)	***	3.2 (0.9)	3.9 (0.8)	***	3.5 (0.9)	4.2 (0.7)	***
13	Knowledge	Physical activity	Developing organizational policies for physical activity/active play	2.9 (1)	3.8 (0.9)	***	3.2 (1)	3.9 (0.9)	***	3.3 (1)	4 (0.8)	***
14	Knowledge	Physical activity	Developing organizational policies for limiting screen time	3 (1.1)	3.8 (0.9)	***	3.3 (1.1)	3.9 (0.9)	***	3.4 (1.1)	4 (0.8)	**
15	Knowledge	Healthy eating	Healthy beverage choices	3.9 (0.9)	4.3 (0.7)	***	4.1 (0.8)	4.3 (0.7)	**	4.1 (0.7)	4.4 (0.7)	*
16	Knowledge	Healthy eating	Supporting breast feeding	3.5 (1.3)	4.1 (1)	***	3.7 (1)	4 (0.8)	**	3.6 (1.2)	4.1 (0.9)	*
17	Knowledge	Healthy eating	Supporting children to become good eaters	3.8 (0.9)	4.3 (0.7)	***	3.8 (0.9)	4.2 (0.7)	***	3.9 (0.9)	4.3 (0.7)	**
18	Knowledge	Healthy eating	Food safety	4 (0.9)	4.3 (0.7)	***	4 (0.8)	4.2 (0.7)	*	4.1 (0.8)	4.4 (0.7)	**
19	Knowledge	Healthy eating	Creating a physical space that supports healthy eating	3.7 (1)	4.3 (0.7)	***	3.7 (0.9)	4.1 (0.7)	***	3.9 (1)	4.3 (0.7)	**
20	Knowledge	Healthy eating	Offering a variety of foods at meals and snacks from Canada's Food Guide	3.8 (0.9)	4.3 (0.7)	***	3.9 (0.9)	4.2 (0.6)	***	4.1 (0.8)	4.4 (0.7)	*
21	Knowledge	Healthy eating	Communicating about food and healthy eating with families	3.5 (1)	4.1 (0.8)	***	3.7 (0.9)	4 (0.8)	**	3.8 (0.9)	4.3 (0.7)	***
22	Knowledge	Healthy eating	Developing organizational policies for healthy eating	3.1 (1.1)	3.9 (0.9)	***	3.4 (1)	4 (0.7)	***	3.6 (1.1)	4.1 (0.9)	**
23	Confidence	Physical activity	Locomotor skills	3.2 (1)	4.1 (0.7)	***	3.3 (1)	3.9 (0.7)	***	3.6 (0.9)	4.3 (0.7)	***
24	Confidence	Physical	Manipulative skills	3.5 (1)	4.1 (0.7)	***	3.5 (0.9)	4 (0.7)	***	3.7 (0.9)	4.3 (0.7)	***

				In-po	erson worksho	р	Vir	tual workshop		E-learning module		
#	Туре	Category	Area	Pre-survey average (SD)	Post-survey average (SD)	p-value	Pre-survey average (SD)	Post-survey average (SD)	p-value	Pre-survey average (SD)	Post-survey average (SD)	p-value
		activity										
25	Confidence	Physical activity	Children's movement confidence	3.6 (0.9)	4.2 (0.7)	***	3.6 (0.9)	4.1 (0.7)	***	3.7 (0.8)	4.3 (0.7)	***
26	Confidence	Physical activity	Children's motivation to move	3.6 (0.9)	4.2 (0.7)	***	3.7 (0.9)	4 (0.7)	***	3.8 (0.9)	4.3 (0.7)	***
27	Confidence	Physical activity	Balance and stability activities	3.5 (0.9)	4.2 (0.7)	***	3.5 (0.9)	4 (0.7)	***	3.7 (0.9)	4.4 (0.7)	***
28	Confidence	Physical activity	Moderate to vigorous physical activity	3.5 (0.9)	4.2 (0.7)	***	3.5 (0.9)	4 (0.7)	***	3.8 (0.9)	4.3 (0.7)	**
29	Confidence	Physical activity	Frequent short burst, intermittent activity	3.3 (0.9)	4 (0.8)	***	3.4 (1)	4 (0.7)	***	3.8 (0.8)	4.3 (0.7)	***
30	Confidence	Physical activity	Facilitated physical activities	3.6 (0.9)	4.2 (0.7)	***	3.6 (0.9)	4 (0.7)	***	3.7 (0.9)	4.2 (0.7)	**
31	Confidence	Physical activity	Provide opportunities for exploration and free play	4 (0.8)	4.3 (0.7)	***	4 (0.9)	4.2 (0.7)	*	4 (0.9)	4.4 (0.7)	*
32	Confidence	Physical activity	Adapt physical activities for different ages, abilities and cultures	3.8 (0.9)	4.1 (0.7)	***	3.7 (0.9)	4 (0.7)	**	3.8 (0.9)	4.2 (0.7)	**
33	Confidence	Physical activity	Create an environment that encourages physical activity	3.9 (0.9)	4.3 (0.7)	***	3.8 (0.9)	4.2 (0.6)	***	4 (0.9)	4.3 (0.7)	NS
34	Confidence	Physical activity	Limit sedentary behaviours (e.g. screen time and prolonged sitting	3.7 (1)	4.2 (0.7)	***	3.9 (0.9)	4.1 (0.7)	**	3.9 (0.9)	4.4 (0.7)	*
35	Confidence	Physical activity	Communicate about physical activity/physical literacy with families	3.3 (1)	4 (0.8)	***	3.5 (0.9)	3.9 (0.7)	***	3.6 (0.9)	4.2 (0.7)	***
36	Confidence	Physical activity	Developing organizational policies for physical activity/active play	3.1 (1.1)	3.9 (0.9)	***	3.4 (0.9)	3.9 (0.8)	***	3.5 (1.1)	4.1 (0.8)	**
37	Confidence	Physical activity	Develop organizational policies for limiting screen time	3.2 (1.1)	3.9 (0.9)	***	3.5 (1)	4.1 (0.8)	***	3.4 (1)	4.1 (0.8)	***
38	Confidence	Physical activity	Model physical activities	3.8 (0.9)	4.3 (0.7)	***	3.7 (0.9)	4.1 (0.7)	***	3.9 (0.9)	4.4 (0.7)	**

			Area	In-po	erson worksho	р	Virtual workshop			E-learning module		
#	Туре	Category		Pre-survey average (SD)	Post-survey average (SD)	p-value	Pre-survey average (SD)	Post-survey average (SD)	p-value	Pre-survey average (SD)	Post-survey average (SD)	p-value
39	Confidence	Healthy eating	Offer a variety of foods at meals and snacks from Canada's Food Guide	3.9 (0.9)	4.4 (0.7)	***	3.9 (0.9)	4.1 (0.7)	*	3.5 (1.1)	4.1 (0.9)	***
40	Confidence	Healthy eating	Make healthy beverages available	4 (0.9)	4.4 (0.7)	***	3.9 (1)	4.4 (0.7)	***	4 (0.8)	4.4 (0.6)	**
41	Confidence	Healthy eating	Support breastfeeding	3.6 (1.2)	4.1 (1)	***	3.7 (1)	4.1 (0.8)	***	4.3 (0.8)	4.4 (0.6)	NS
42	Confidence	Healthy eating	Support children to become good eaters	4 (0.9)	4.4 (0.7)	***	3.8 (0.9)	4.2 (0.7)	***	3.8 (1.2)	4.2 (0.8)	*
43	Confidence	Healthy eating	Provide a safe food environment	4.1 (0.9)	4.4 (0.7)	***	4 (0.9)	4.3 (0.7)	***	4 (0.9)	4.3 (0.7)	**
44	Confidence	Healthy eating	Create a physical space that supports healthy eating	3.9 (0.9)	4.4 (0.7)	***	3.8 (0.9)	4.2 (0.7)	***	4.2 (0.7)	4.4 (0.6)	*
45	Confidence	Healthy eating	Model and promote healthy eating habits	4 (0.9)	4.4 (0.7)	***	4 (0.9)	4.3 (0.6)	***	4 (0.9)	4.4 (0.7)	***
46	Confidence	Healthy eating	Communicate about food and healthy eating with families	3.6 (1)	4.1 (0.8)	***	3.6 (0.9)	4.1 (0.6)	***	4.1 (0.8)	4.4 (0.6)	*
47	Confidence	Healthy eating	Develop organizational policies for healthy eating	3.3 (1.1)	3.8 (0.9)	***	3.5 (0.9)	4.1 (0.8)	***	3.8 (0.9)	4.2 (0.8)	**

^{*:} p-value < 0.05, **:p-value < 0.01, ***: p-value < 0.001, NS: not significant (p-value \geq 0.05) SD: Standard deviation

N/A: Data not available

Appendix 5. List of knowledge translation activities

Туре	Name	Date	Organization	Location
	Children Heart of the Matter Conference	Jan, 2018	Options CCRR	Surrey, BC
	ECE BC Conference	May, 2018	ECE BC	Richmond, BC
	Interactive Expo	Mar, 2018	Kamloops CCRR	Kamloops, BC
	BCRPA Symposium	Apr, 2018	BCRPA	Vancouver, BC
	Richmond Wee Walk	May, 2018	Richmond Move for Health Week	Richmond, BC
Conference	Chilliwack Early Years Day	Jun, 2018	Fraser East Early Years Table	Chilliwack, BC
Booth	Community Resource Fair for Families in Mount Pleasant Neighbourhood	Sept, 2018	Mount Pleasant Neighbourhood House	Vancouver, BC
	Ready, Set, Learn - Yaletown	Oct, 2018	Ready, Set, Learn	Vancouver, BC
	Ready, Set, Learn - West End Community Centre	Oct, 2018	Ready, Set, Learn	Vancouver, BC
	7th Conference on Recent Advances in the Prevention and Treatment of Childhood and Adolescent Obesity	Oct, 2018	UBC Inter-professional Continuing Education	Calgary, AB
	Children Heart of the Matter Conference 2019	Jan, 2019	Options (Surrey CCRR)/Centre for Child Development	Surrey, BC
	Early Years Conference (UBC)	Jan, 2019	UBC	Vancouver, BC
	ECE BC Conference 2018	May, 2018	ECE BC	Richmond, BC
	2018 Early Child Development Conference (Sea to Sky: Putting Children First) - 2 workshops	Apr, 2018	Sea to Sky: Putting Children First	Squamish, BC
	Creative Concepts - Kamloops Conference	May, 2018	Thompson River University-ECE	Kamloops, BC
Conference	Sport for Life Canadian Summit 2018	Jan, 2018	Sport for Life Society	Gatineau, QC
Presentation	7th Conference on Recent Advances in the Prevention and Treatment of Childhood and Adolescent Obesity	Oct, 2018	UBC Inter-professional Continuing Education	Calgary, AB
	Public Health Agency of British Columbia (PHABC)	Nov, 2018	PHABC	Vancouver, BC
	Sport for Life Summit 2019	Jan, 2019	Sport for Life Society	Gatineau, QC
	International Union for Health Promotion (IUHPE) and Education World Conference	Apr, 2019	IUHPE	Rotorua, New Zealand
	International Physical Literacy Conference	May, 2019	Sport for Life	Winnipeg, MB
In-person	BC ECE Articulation Committee	May, 2018	All ECE college in BC	Nanaimo, BC
presentation	Presentation for Health Authority Licensing Officers at VCH	Nov, 2018	Vancouver Coastal Health	Vancouver, BC
	Presentation for Health Authority Licensing Officers at FH	Jan, 2018	Fraser Health	Surrey, BC

Туре	Name	Date	Organization	Location
	Alberta CAPC Yearly Forum	Oct, 2018	CAPC Alberta	
	Interior Health - Maternal, Infant Public Health	Nov, 2017	Interior Health	
Online	Interior Health - Maternal, Infant Public Health, Licensed Care Facilities/Early Years Centres	Dec, 2017	Interior Health	Virtual
Presentation	Interior Health - Maternal, Infant Public Health, Licensed Care Facilities/Early Years Centres		Interior Health	
	Interior Health - Maternal, Infant Public Health, Licensed Care Facilities/Early Years Centres	Sept, 2018	Interior Health	
	Appetite to Play Webinar		Child Health BC	
	BC Early Years Nutrition Call		Health Authority Dietitians	
NA Calabia a m	ECE BC Members Only Call	May, 2018	ECE BC	Market and
Webinar	Food Skills for Families Webinar	Jun, 2018	Diabetes Canada	Virtual
	Healthy Start Working Group	Sept, 2018	Healthy Start Working Group	
	All the Right Moves: Physical Activity Across the Lifespan	Dec, 2018	BCAHL	
	Wejis et al. Strengthening the health system through novel population and public health fellowships in Canada, <i>Canadian Journal of Public Health</i>	Feb, 2019		
Publication	Fakih et al. The evidence-informed decision-making casebook: Sharing success stories for public health in Canada, <i>National Collaborating Centre for Methods and Tools (NCCMT)</i>		N/A	
	Fakih et al. One Year Later: Increasing Our "Appetite to Play", The Early Childhood Educator	2018		